

**Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A method of forming coatings of at least two different coating molecules on at least two electrodes, the method comprising:

- (a) providing an array of at least two individually-addressable electrodes,
- (b) allowing a layer of a masking molecule to adsorb onto all electrodes,
- (c) inducing electrochemical desorption of the masking molecule from at least one but not all electrodes to expose a first set of exposed electrodes,
- (d) allowing a first coating molecule to adsorb onto the first set of exposed electrodes, thereby generating a first set of coated electrodes,
- (e) exposing all electrodes, including the first set of coated electrodes, to a masking molecule to allow adsorption of the masking molecule onto all electrodes, including the first set of coated electrodes,
- (f) inducing electrochemical desorption of masking molecule from a second set of electrodes to expose a second set of exposed electrodes,
- (g) allowing a second coating molecule to adsorb onto the second set of exposed electrodes;

wherein the first coating molecule and the second coating molecule each have a molecular weight greater than or equal to 800 Da; and

wherein the masking molecule has a molecular weight less than or equal to 500 Da.

2. (previously presented) The method according to claim 1 in which the array comprises at least 10 individually-addressable electrodes.

3. (previously presented) The method according to claim 1 comprising repeating steps (c) to (e) at least 8 times so as to form coatings of at least 10 different coating molecules on at least 10 different sets of electrodes.
4. (previously presented) The method according to claim 1 in which the diameter of each electrode is not more than 50  $\mu\text{m}$ .
5. (previously presented) The method according to claim 1 in which the separation between electrodes is not more than 30  $\mu\text{m}$ .
6. (previously presented) The method according to claim 1 in which the electrodes are metal electrodes and the masking molecules and the coating molecules are thiolated.
7. (previously presented) The method according to claim 1 in which the coating molecules are macromolecules having molecular weight of at least 500.
8. (previously presented) The method according to claim 1 in which the coating molecules are oligonucleotides modified with a functional group capable of adsorbing onto the electrodes.
9. (previously presented) The method according to claim 8 additionally comprising providing nanoparticles functionalised with oligonucleotides complementary to the oligonucleotide coating molecules and allowing the strands to hybridise.
10. (previously presented) The method according to claim 1 in which the coating molecules are polypeptides modified with a functional group capable of adsorbing onto the electrodes.

11. (previously presented) The method according to claim 1 in which step (b), step (d) or both also comprise application of an AC or DC electric field in order to induce orientation of the molecules being adsorbed.

12. (previously presented) The method according to claim 1 comprising controlling the potential of electrodes from which desorption is not required in steps (c), step (f) or both so as to prevent desorption from those electrodes.

13. (previously presented) The method according to claim 1 comprising application of an AC or DC potential to the electrodes onto which adsorption is required in step (b), step (e), step (g) or any combination of these.

14. (withdrawn) An array of at least 3 sets of individually-addressable electrodes, each set having adsorbed thereon a different coating molecule, the minimum distance between electrodes being not more than 900 nanometres.

15. (NEW) The method of claim 1, wherein the masking molecule has a molecular weight less than or equal to 200 Da.

16. (NEW) The method of claim 1, wherein the masking molecule has a molecular weight less than or equal to 150 Da.

17. (NEW) The method of claim 1, wherein the first coating molecule and the second coating molecule each have a molecular weight greater than or equal to 1000 Da.

18. (NEW) The method of claim 1, wherein the first coating molecule and the second coating molecule each have a molecular weight greater than or equal to 1500 Da.

19. (NEW) The method of claim 1, wherein the first coating molecule and the second coating molecule each have a molecular weight greater than or equal to 3000 Da.

20. (NEW) The method of claim 1, wherein the first coating molecule and the second coating molecule are each oligonucleotides having from 5 to 150 bases.

21. (NEW) The method of claim 1, wherein the first coating molecule and the second coating molecule are each proteins.

22. (NEW) The method of claim 1, wherein the first coating molecule and the second coating molecule are each enzymes.

23. (NEW) The method of claim 1, wherein the masking molecule is 6-mercapto-1-hexanol.

24. (NEW) The method of claim 1, wherein the first coating molecule is an oligonucleotide of sequence CAGGATGGCGAACAACAAGA-thiol and the masking molecule is 6-mercapto-1-hexanol.

25. (NEW) The method of claim 1, wherein the first coating molecule is an oligonucleotide of sequence AGGTCGCCGCCC-thiol and the masking molecule is 6-mercapto-1-hexanol.

26. (NEW) The method of claim 1, wherein the first coating molecule is an oligonucleotide of sequence CAGGATGGCGAACAACAAGA-thiol, the second coating molecule is an oligonucleotide of sequence AGGTCGCCGCCC-thiol, and the masking molecule is 6-mercapto-1-hexanol.